S. HRG. 101-1137

VEHICULAR NATURAL GAS JURISDICTION ACT OF 1990

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY REGULATION AND CONSERVATION

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

S. 3085

TO LIMIT THE JURISDICTION OF THE FEDERAL ENERGY REGULATORY COMMISSION OVER LOCAL DISTRIBUTION COMPANY WHOLESALERS OF NATURAL GAS FOR ULTIMATE CONSUMPTION AS A FUEL IN MOTOR VEHICLES

SEPTEMBER 25, 1990

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VEHICULAR NATURAL GAS JURISDICTION ACT OF 1990

TUESDAY, SEPTEMBER 25, 1990

U.S. SENATE,
SUBCOMMITTEE ON ENERGY REGULATION
AND CONSERVATION,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Timothy E. Wirth, presiding.

OPENING STATEMENT OF HON. TIMOTHY E. WIRTH, U.S. SENATOR FROM COLORADO

Senator WIRTH. Good morning, and thank you all for being here. The Office of Technology Assessment released a major report last Friday entitled "Replacing Gasoline, Alternative Fuels for Light Duty Vehicles." This report was requested by this committee and the House Energy and Commerce Committee as part of OTA's ongoing assessment of technological risk and opportunities in future U.S. energy supply and demand.

Many benefits of natural gas vehicles were highlighted in the OTA report. OTA concludes:

One, natural gas vehicles would yield large ozone and carbon monoxide pollution benefits even over methanol.

Two, a vast production, transportation, storage and distribution system already exists for natural gas, while new dedicated transportation and storage facilities for ethanol and methanol would have to be constructed at great expense.

Three, the use of natural gas would confer U.S. energy benefits due to the substantial North American supplies and pipeline delivery systems. This would create competition for our transportation fuel dollars, thus dampening the effects of Middle East instability and world oil price shocks.

Fourth, OTA views the primary attraction of the 700,000 gas-powered vehicles operating worldwide as a fuel source not subject to the vagaries of OPEC. Unlike methanol, natural gas needs no expensive processing to become a viable vehicle fuel, so that higher priced gas can still be a viable feedstock if pipeline transportation costs are not too high. Further, it does not have the toxicity or explosion hazards of methanol or gasoline.

And fifth, dedicated natural gas vehicles would be capable of similar power, higher efficiencies, and substantially lower emis-

sions than equivalent gasoline-powered vehicles. Further, natural gas vehicles do not appear to offer a substantial engineering challenge to engine designers. Natural gas vehicles currently experience certain problems such as shorter driving range and higher vehicle and gas compression cost.

OTA, however, concludes that, "natural gas is an attractive fuel that deserves careful consideration as an alternative to gasoline for the U.S. light duty fleet. Yet, unlike methanol and ethanol, there may be some regulatory hurdles that could impede the competitive research, development, and demonstration of natural gas vehicles."

That is why the subcommittee is today examining S. 3085. This legislation would clarify that a local gas distribution company's sales of compressed natural gas for vehicle use is the concern of State utility commissions, not the FERC. This responsibility should be of local concern even though the vehicles might consume some of the gas while making their rounds in another State.

For example, a natural gas-fueled delivery service fleet serving the metropolitan New York area might be fueled at a central facility in New Jersey yet travel daily to New York, Pennsylvania, and Connecticut.

Would FERC assert jurisdiction under the Natural Gas Act because the vehicle carries the compressed natural gas interstate and, therefore, does not consume all the gas in one State?

Would the mere ambiguity of present law inhibit local distribution companies from entering natural gas vehicle programs?

Would alternative fuel competitors challenge the gas industry in its efforts to promote gas vehicle use?

S. 3085 would address those problems.

This subcommittee held hearings on the home heating fuel price spike and on the refining of used motor oil this summer as Saddam Hussein was amassing troops on the Kuwaiti border. Those hearings addressed our energy security and resulted in an agreement with the EIA on the monitoring of home heating fuels and the reporting out of S. 2923 which promotes the reuse of motor oil, thus curbing imports. This bill would also enhance energy security by removing regulatory impediments to the development of a clean North American transportation fuel.

I have a statement for the record from Senator McClure.

[The prepared statement of Senator McClure and the text of S. 3085 follow:]

PREPARED STATEMENT OF HON. JAMES A. MCCLURE, U.S. SENATOR FROM IDAHO

I want to commend Senator Johnston for introducing this bill and Senator Wirth for holding this hearing.

While natural gas fueled vehicles can make but a small dent in our growing dependency on foreign petroleum, it will help. I firmly believe that we must take every reasonable step possible to reduce our foreign energy vulnerability.

Thus I support the thrust of this legislation which is to remove a potential regulatory tangle which could suffocate this infant industry.

I look forward to hearing from today's witnesses.

II

101ST CONGRESS
2D SESSION

S. 3085

To limit the jurisdiction of the Federal Energy Regulatory Commission over local distribution company wholesalers of natural gas for ultimate consumption as a fuel in motor vehicles.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 20 (legislative day, SEPTEMBER 10), 1990

Mr. JOHNSTON (for himself, Mr. BINGAMAN, Mr. WIRTH, Mr. DOMENICI, Mr. BUMPERS, Mr. NICKLES, and Mr. BRADLEY) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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A BILL

To limit the jurisdiction of the Federal Energy Regulatory Commission over local distribution company wholesalers of natural gas for ultimate consumption as a fuel in motor vehicles.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be referred to as the "Vehicular Natural Gas Jurisdiction Act of 1990".

SEC. 2. FINDINGS.

The Congress recognizes that—

(a) natural gas is a viable motor vehicle fuel;

(b) markets for natural gas as a vehicular fuel should be open and robust;

(c) institutional barriers to an equal opportunity for full market development of natural gas as a vehicular fuel should be minimized; and

(d) regulation under certain provisions of the Natural Gas Act is a potential restraint on full market development of natural gas as a vehicular fuel.

Therefore, it is in the national interest to insure an equal opportunity for natural gas to develop as a vehicular fuel and to remove aspects of Natural Gas Act regulation that may inhibit the development of natural gas in vehicle fuel markets.

SEC. 3. DEFINITIONS.

For the purposes of this Act:

(a) The term "VNG" means natural gas for ultimate use as a fuel in a motor vehicle, and includes compressed natural gas.

(b) The term "motor vehicle" includes any automobile, truck, bus, van, or other on-road or off-road motor vehicle, including a boat.

(c) All terms defined in section 2 of the Natural Gas Act shall have the same meaning as stated therein.

SEC. 4. PERSONS WITH HINSHAW EXEMPTIONS.

For purposes of section 1(c) of the Natural Gas Act, in the case of any sale of VNG, such VNG shall be deemed to be "ultimately consumed" within the State in which physical delivery of such VNG occurs, whether or not physical combustion of such VNG occurs in another State.

SEC. 5. PERSONS WITH SERVICE AREA DETERMINATIONS.

For purposes of the Natural Gas Act:

(a) WHOLESALES.—In the case of a wholesale of VNG by the holder of a service area determination under section 7(f) of the Natural Gas Act, such holder shall be subject to the exclusive jurisdiction of the State commission in the State in which physical delivery of such VNG occurs, whether or not physical combustion of such VNG occurs in another State.

(b) TRANSPORTATION.—In the case of transportation of VNG by the holder of a service area determination under section 7(f) of the Natural Gas Act, such VNG shall for purposes of section 7(f)(2) of the Natural Gas Act be deemed to be "consumed" within the State in which physical delivery of such VNG occurs, whether or not physical combustion of such VNG occurs in another State.

○

Senator WIRTH. We greatly appreciate your being here this morning and look forward to your testimony. Our first panel is Mr. Robert Christin, the Assistant General Counsel for Pipeline Certificates, the Office of the General Counsel at the Federal Energy Regulatory Commission, accompanied by Mr. Robert Cupina, the Deputy Director.

The second panel will include Mr. Ronald Tilley, the CEO of Columbia Gas, testifying on behalf of AGA, and Mr. Carl Cummins, the Director of Government and Community Relations from Minnegasco in Minneapolis.

Gentlemen, we thank you very much for being here.

Mr. Christin, we will of course include your statement in full in the record and would appreciate your summarizing that in whatever way you think would be appropriate. Thank you very much for your attention to this issue.

STATEMENT OF ROBERT F. CHRISTIN, ASSISTANT GENERAL COUNSEL, PIPELINE CERTIFICATES, OFFICE OF THE GENERAL COUNSEL, FEDERAL ENERGY REGULATORY COMMISSION, ACCOMPANIED BY ROBERT CUPINA, DEPUTY DIRECTOR, PIPELINE CERTIFICATES AND OIL REGULATION, OFFICE OF PIPELINE AND PRODUCER REGULATION

Mr. CHRISTIN. Thank you, Mr. Chairman.

Before I begin, I would like to state that my views are those of the staff and do not necessarily represent the views of the Chairman or any of the other Commissioners.

I have one or two technical observations to make about the proposed legislation. The term "wholesale" which appears in section 5(a) is not defined in S. 3085 or in the Natural Gas Act. I think this could cause some confusion.

Also, the 1983 declaratory order that I referred to in my testimony found that if an interstate pipeline sold natural gas through its distribution facilities to a customer who converted that gas into compressed natural gas and then sold it to others as a fuel in motor vehicles, the sale by the pipeline would be jurisdictional under the Natural Gas Act, and nothing in S. 3085, as I understand it, would change the jurisdictional consequences of that transaction.

Also, as a general matter most local distribution companies would also qualify for exemption from Federal jurisdiction under section 1(c) of the Natural Gas Act, but it is possible that some few would not. If a particular State did not exercise jurisdiction over the rates and services of a local distribution company, that company would be exempt from Federal jurisdiction by virtue of its status as a local distribution company, but it would not meet the Hinshaw qualifications of section 1(c).

So unless such a company had a service area determination or received supplies only from intrastate sources, its wholesales of vehicular natural gas would remain subject to regulation by the FERC.

This concludes my comments, and I would be happy to answer any questions that you might have.

[The prepared statement of Mr. Christin follows, attachments have been retained in subcommittee files:]

PREPARED STATEMENT OF ROBERT F. CHRISTIN, ASSISTANT GENERAL COUNSEL, PIPELINE CERTIFICATES, FEDERAL ENERGY REGULATORY COMMISSION

Mr. Chairman and members of the committee, my name is Robert F. Christin, and I am the Assistant General Counsel for Pipeline Certificates at the Federal Energy Regulatory Commission. I appreciate this opportunity to appear before you today to testify on S. 3085, a bill to limit the jurisdiction of the Federal Energy Regulatory Commission over local distribution company wholesalers of natural gas for ultimate consumption as a fuel in motor vehicles. With me this morning is Robert Cupina, Deputy Director of the Commission's Office of Pipeline and Producer Regulation.

Mr. Chairman, before I begin my testimony, I would like to state that my views are those of the staff and do not necessarily represent the views of the Chairman, Commission, or any individual Commissioner.

Section 4 of S. 3085 provides that for purposes of section 1(c) of the Natural Gas Act, natural gas for ultimate use as fuel in a motor vehicle is deemed to be consumed in the state in which physical delivery occurs, whether or not the physical combustion of the fuel occurs in another state. one of the requirements of the Hinshaw exemption contained in section 1(c) of the natural gas act is that gas sold under this provision must be ultimately consumed within the state where it is received by the Hinshaw pipeline. Thus, S. 3085 would ensure that a Hinshaw pipeline that is exempt from Federal regulation by virtue of section 1(c) would not lose that exemption if it sold natural gas for use in a motor vehicle that later was driven out of the state where the gas was delivered.

In effect, section 4 would codify the same view of such a transaction that the Commission adopted by two declaratory orders issued in 1982 and 1983. For the convenience of the committee I have attached copies of these orders to the statement that I submitted for the record. I see no conflict between the proposed legislation and current Commission policy. In addition, it may be helpful for the legislative history of S. 3085 to indicate that the bill is a statutory codification of the *Northern Illinois Gas Company* and *Kansas-Nebraska Natural Gas Company, Inc.* decisions.

Section 5(a) of the proposed bill provides exemption from Federal jurisdiction to holders of a service area determination under section 7(f) of the Natural Gas Act who sell vehicular natural gas wholesale.

Section 5(b) of the proposed bill would complement the Uniform Regulatory Jurisdiction Act of 1988. That legislation provided that transportation to ultimate consumers by a company that holds a service area determination under section 7(f) of the Natural Gas Act is under the exclusive jurisdiction of the state in which the gas is consumed.

Likewise, section 5(b) of S. 3085 provides that the transportation of vehicular natural gas by the holder of a service area determination is under the exclusive jurisdiction of the state commission in the state where the physical delivery occurs.

Again, I see no conflict between these provisions and current Commission policy.

I would like to make a few technical observations however.

The term "wholesale", which appears in section 5(a) is not defined in S. 3085 or in the Natural Gas Act. This could cause confusion.

Also, the 1983 declaratory order to which I referred earlier found that if an interstate pipeline sold natural gas through its own distribution facilities to a customer who converted that gas into compressed natural gas and then sold it to others for use as fuel in motor vehicles, the sale by the pipeline would be jurisdictional under the Natural Gas Act. Nothing in S. 3085, as I understand it, would change the jurisdictional consequences of such a transaction.

Finally, although as a general matter most local distribution companies would also qualify for exemption from Federal jurisdiction under section 1(c) of the Natural Gas Act, it is possible that some few would not. If a particular state did not exercise jurisdiction over the rates and services of a local distribution company, the company would be exempt from Federal jurisdiction by virtue of its status as a local distribution company, but would not meet the Hinshaw qualifications of section 1(c). Unless such a company had a service area determination or received supplies only from intrastate sources, its wholesales of vehicular natural gas would remain subject to regulation by the Federal Energy Regulatory Commission.

Thank you Mr. Chairman. This concludes my comments. I would be happy to answer any questions you may have about the proposed legislation.

Senator WIRTH. Mr. Christin, thank you very much. First let me ask you, in the legislation you point out that the bill does not define the term "wholesale." How would you suggest that we might do that?

Mr. CHRISTIN. I understand wholesale to mean a sale for resale and that is a term that is used in the Natural Gas Act. So that might be a more helpful phrase.

Senator WIRTH. Say that again.

Mr. CHRISTIN. The term "sale for resale" is how I understand wholesale, and the term "sale for resale" appears in the Natural Gas Act. So if you used that phrase you would have consistency between the two statutes.

Senator WIRTH. And that would resolve any kind of a problem that you all would have in terminology, is that right?

Mr. CHRISTIN. Yes, sir.

Senator WIRTH. Your testimony points out those two problems, where certain transactions would not be exempted from FERC jurisdiction. One involves the possibility of an interstate gas pipeline distributing gas for vehicle use through its own low-pressure distribution system. The other would involve a local distribution company that is not regulated by a State utility commission.

If the Congress expressed an intent for FERC not to assert its jurisdiction over any vehicular natural gas transactions, even though regulatory quirks might otherwise trigger this result under S. 3085, how would you modify the language to ensure that FERC does not assert jurisdiction?

Mr. CHRISTIN. I would have to think about specific language. It is just a technical drafting problem. I would like to have a chance to think about it.

Senator WIRTH. Could we ask you to get back to us with a—what we are hoping is that we might be able to get a complete record on this, and we are toward the end of the session as you know, but all kinds of things happen, and if we could get a comment back from you on that, it would be very helpful.

Mr. CHRISTIN. Sure, we could do that.

Senator WIRTH. Under current law, must an LDC receive certification from the Commission that it qualifies as an Hinshaw pipeline or may the pipeline merely satisfy the statutory criteria?

Mr. CHRISTIN. It does not need certification. We have treated it as a self-implementing exemption. If a company believes that it qualifies under the Hinshaw exemption and is comfortable with that fact, it can go ahead and function as a Hinshaw pipeline.

If it wants an opinion from the Commission it can ask for one, but there is no requirement for certification.

Senator WIRTH. Mr. Christin, we greatly appreciate you and Mr. Cupina being here this morning. I think you have this question; we will make sure that that is available to you right away. I mean, the staff can give you the question right now, can we not, to make sure that you understand that and we have your question on the wholesale issue and the Hinshaw exemption issue. Those were the three technical items that appeared from your comments we ought to get at.

Can you think of other items, for the purposes of the record, that we ought to have now?

Mr. CHRISTIN. I do not have anything to add unless Mr. Cupina does.

Senator WIRTH. I think the minority may well have questions as well, so we will make sure that these are available to you and the others as well, and we look forward to hearing from you.

Thank you again for being here. We appreciate it.

Mr. CHRISTIN. Thank you, Senator.

Senator WIRTH. Our second panel this morning comprises two distinguished witnesses, as I pointed out earlier, Mr. Ronald Tilley from Columbia Gas, and Mr. Carl Cummins from Minnegasco in Minneapolis.

I believe Mr. Cummins is accompanied by Mr. Jeffrey Seisler, Executive Director of the Natural Gas Vehicle Coalition in Arlington, Virginia.

Gentlemen, you are both familiar with the rules of the committee. We would hope that you could summarize your testimony. You saw the extraordinary speed with which the FERC witnesses testified, gave us their testimony and response, a precedent we would all like to see in the Senate overall.

Mr. Tilley.

STATEMENT OF C. RONALD TILLEY, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, COLUMBIA GAS DISTRIBUTION COMPANIES, ON BEHALF OF THE AMERICAN GAS ASSOCIATION

Mr. TILLEY. Thank you, Mr. Chairman, and we will certainly endeavor to accommodate your comments. Good morning. I am Ron Tilley. I am the chairman and chief executive officer of the Columbia Gas Distribution Companies.

We provide service to more than 1.8 million residential, commercial, and industrial customers in parts of six States: Kentucky, Maryland, New York, Ohio, Pennsylvania, and Virginia.

I am also the incoming chairman of the Natural Gas Vehicle Coalition. I am testifying today on behalf of the American Gas Association, which as you know is a national trade association comprised of some 250 natural gas distribution and transmission companies.

These companies account for about 85 percent of the Nation's total annual gas utility sales. AGA and Columbia take great interest in S. 3085 because it would eliminate a potential impediment to widespread use of natural gas as a vehicle fuel.

Columbia is working with our State legislatures and regulatory commissions to insure that State regulatory barriers are addressed, and so I am particularly pleased to be here today to testify on a bill that does remove a potential Federal barrier.

S. 3085 applies to local distribution companies which meet the statutory requirements of the Hinshaw exemption under section 1(c) of the Natural Gas Act. S. 3085 clarifies that these companies would retain an exemption from Federal rate regulation for the sale or transportation of natural gas for resale to vehicle operators.

There are solid policy justifications for S. 3085: air quality improvements, increased energy security, and effective coordination with pending amendments to the Clean Air Act.

To give you a feel for the types of programs which are likely to flourish if regulatory barriers are removed, I would like to briefly describe Columbia's activities. Our biggest program has been the sponsorship of the Nation's first transit bus designed and built to operate exclusively on natural gas.

The work of our partners in this program, the Flexible Bus Co. and Cummins Engine Co., means that similar natural gas buses are available nationwide. Columbia and other gas companies are working to expand the use of natural gas in our fleets and to also encourage businesses to use natural gas in their vehicles.

Columbia, for example, is planning to build additional natural gas fuel stations in Columbus and Toledo, Ohio; in Pittsburgh and York, Pennsylvania; Northern Virginia, and also in Lexington, Kentucky.

We are also involved in several nationwide programs with other utility and nonutility partners. One in which you may be particularly interested is the natural gas fueling station which will soon be in operation later this year at the Amoco station near Capitol Hill.

In conclusion, I want to compliment this committee for its work on S. 3085. I can assure you that many in the gas industry, as well as engine and vehicle manufacturers, refueling operators, and vehicle conversion companies are excited about the very real prospects for expansion of natural gas vehicles. However, much work which will require substantial financial investment needs to be done to take the natural gas vehicle industry to its potential.

For these reasons, it is important to eliminate any regulatory barriers that might inhibit interest or investment. It is also important to note that nothing in this bill would provide a competitive advantage to natural gas vehicles over other alternative fuel vehicles. Rather, this bill removes a potential obstacle that would provide a disadvantage for natural gas in competing with other fuels.

That completes my statement, Mr. Chairman.

[The prepared statement of Mr. Tilley follows:]

PREPARED STATEMENT OF C. RONALD TILLEY, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, COLUMBIA GAS DISTRIBUTION COMPANIES, ON BEHALF OF THE AMERICAN GAS ASSOCIATION

INTRODUCTION

The American Gas Association (A.G.A.) is a national trade association comprising some 250 natural gas distribution and transmission companies. These companies account for approximately 85 percent of the nation's total annual gas utility sales.

The Columbia Gas Distribution Companies (CDC) are local distribution companies serving almost 1.8 million residential, commercial and industrial customers in the states of Kentucky, Ohio, Maryland, New York, Pennsylvania and Virginia. This includes nearly 28,000 linear miles of pipeline and over a thousand communities served at retail.

A.G.A. and CDC take great interest in S. 3085 because the bill clarifies that potential regulatory and statutory impediments to the development and commercialization of natural gas as a vehicle fuel, in fact, will not be impediments. We endorse the provisions of the bill that clarify that companies that are exempt from federal regulation under the Natural Gas Act will not risk losing that exemption by virtue of selling natural gas that will ultimately be consumed in vehicles.

POLICY RATIONALE FOR REMOVING POTENTIAL IMPEDIMENTS

There are three primary policy justifications for removing potential impediments to natural gas sales for vehicular use: air quality improvements, increased energy security, and effective coordination with pending amendments to the Clean Air Act.

With respect to air quality, natural gas vehicles (NGVs) can achieve dramatic reductions, compared to conventionally-fueled vehicles, in tailpipe emissions of reactive hydrocarbons, carbon monoxide (CO), and particulates. NGVs can also achieve net reductions in emissions of greenhouse gases compared to conventional vehicles. Moreover, NGVs use a completely closed fuel system so that they do not experience evaporative emissions, as do conventional vehicles.

These emissions reductions achieved by NGVs can help to rectify our very significant nationwide air quality problems. Last month the United States Environmental Protection Agency released its air quality monitoring data for ground-level ozone (smog) and CO during 1989. These data showed that 96 areas fail to meet the smog standards and 41 areas violate the CO standards under the existing Clean Air Act. Consequently,133 million people in the U.S. live in areas that exceed the smog standard and 78 million live in areas that violate the CO standard.

In fact, the Radian Corporation recently completed a study of the House- and Senate-passed versions of the vehicle provisions of the Clean Air Act amendments.[1] The Radian study concluded that if natural gas were used in all of the fleet vehicles covered by the House version, nonmethane hydrocarbons would be reduced by up to 33,000 tons per year, CO by 280,000 tons per year, and nitrogen oxides (NO_x) by 16,000 tons per year. The Senate version would cover fewer vehicles and, therefore, the Radian estimates of reductions were smaller: up to 5,800 tons per year for nonmethane hydrocarbons, 50,000 tons per year for CO, and 3,700 tons per year for NO_x. Moreover, if vehicle manufacturers offer for sale optimized and dedicated NGVs, Radian estimates that these emission reductions could be achieved at a net annual cost reduction of $328 million under the House bill and $62 under the Senate bill. These savings can be achieved because natural gas is significantly less expensive than equivalent amounts of gasoline.

Increased reliance on NGVs would also improve domestic energy security. Each year in this country, 1.7 million new fleet cars and trucks are purchased and are regularly refueled at central locations. At this rate, within six years over 10 million new fleet vehicles would be purchased. If such vehicles were to operate on natural gas instead of gasoline, they would require about one trillion cubic feet (Tcf) of natural gas. This would represent only about a five percent increase in the current annual demand for natural gas; this increase could be easily accommodated by resources currently available. Since our annual consumption of natural gas is 93 percent produced domestically and the remainder produced in Canada, increased vehicle reliance on natural gas would reduce consumption of imported petroleum in the transportation market and increase our use of a secure domestic source rather than foreign sources that may be subject to political dislocation.

Increased demand for natural gas attributable to vehicles could be met easily by our huge reserves. In May of 1988, DOE issued a landmark study on natural gas supplies, entitled *An Assessment of the Natural Gas Resource Base of the United States.* In this study, which drew upon the knowledge of a number of expert panelists, DOE focused solely on natural gas resources that are domestically available and can be recovered with today's technology. The study found that, in the lower 48 states alone, natural gas reserves and resources total 1,059 trillion cubic feet (Tcf). At the 1989 level of nationwide gas consumption, this amount is equivalent to over a 57-year supply.

The third policy rationale that supports S. 3085 is the effective implementation of Clean Air Act amendments. Although the final structure of the Clean Air Act amendments may not be settled, it seems clear that an alternative fuel program for fleet vehicles will be included in the package. One of the premises on which a fleet vehicle program is based is that every alternative fuel that can meet the required emission standards must have an opportunity to participate in the fleet program. Nearly every other alternative fuel is a non-regulated product, leaving such fuels with only the potential market impediments of price, availability, convenience and other free market obstacles to overcome. In addition to those potential market obstacles, natural gas is a highly-regulated fuel. While current Federal Energy Regulatory Commission practice would not subject local distribution companies (LDCs) to federal regulation of sales of natural gas, S. 3085 would provide the additional clar-

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[1] Radian Corporation, *Economic and Environmental Analysis of Alternative Vehicle Fuel Provisions of H.R. 3030 and S. 1630,* Austin, Texas, August 16, 1990.

ity that sales of natural gas for vehicles would not invoke federal regulation of such sales. This clarity would ensure that natural gas would face only those obstacles that non-regulated fuels would encounter. As a result, S. 3085's approach would avoid undercutting the goal of the Clean Air Act amendment: to allow every alternative fuel to compete equally.

BENEFITS OF S. 3085

S. 3085 seeks to clarify that LDCs that meet the statutory requirements of the Hinshaw exemption under section 1(c) of the Natural Gas Act would retain an exemption from federal regulation for sales of natural gas for resale 1:0 vehicle operators. We emphasize that this approach simply would ensure retention of the status quo, wherein an LDC that makes sales of gas or transports gas for a third party for resale consumption in vehicles would not incur federal regulation. Moreover, the bill in no way would erode the Hinshaw requirements for exempting local gas companies from federal regulation where these criteria are met: (1) the gas has moved through interstate commerce and is received either within or at the border of a state; (2) the gas is consumed entirely within the state; and (3) the local gas company's rates and services are subject to state regulation. Instead, this bill would codify prior FERC opinions and opinions of the FERC General Counsels that, for purposes of the Hinshaw exemption, natural gas is ultimately consumed when it is sold and delivered into vehicles at natural gas refueling stations.[2]

We recommend three clarifications with respect to section 4 of S. 3085. First, as currently drafted, section 4 possibly could be interpreted to require an LDC to be in possession of a certificate indicating that the LDC holds Hinshaw exemption status. We recommend that section 4 be revised to indicate clearly that an LDC simply must meet the statutory requirements expressed in section 1(c) of the Natural Gas Act. This would avoid any impediment that may be associated with obtaining such a certificate and provide sufficient flexibility for an LDC to enter this market.

Second, CDC and A.G.A. recommend that section 4 of S. 3085 clarify that either sale for resale or transportation on behalf of a third party shipper for resale would be covered by this legislation. This change is necessary to recognize that many LDCs transport significant quantities of gas on behalf of industrial and commercial customers. The point is that retail sale of natural gas for VNG may be the result of a wholesale transaction by the LDC or direct purchase of supplies from a marketer or producer which is transported for the purchaser by an LDC.

A third clarification of section 4 of S. 3085 would also be advisable, with respect to the concept of "ultimate consumption." As noted in Senator Johnston's statement submitted upon the introduction of this bill, the intent is to clarify that the Hinshaw exemption included in Section 1(c) of the Natural Gas Act is fully available to an LDC if the gas is "ultimately consumed" by being pumped into a motor vehicle within the state where the LDC received the natural gas, and in which its services are regulated. The key point is that "ultimate consumption" occurs when the vehicle is fueled at the pump, without regard to the subsequent movement of the vehicle.

The clarification provided by section 5 of S. 3085 is similarly beneficial. It would ensure that LDCs that operate in a gas distribution capacity across state lines would not invoke federal regulation by virtue of selling gas that will be used in vehicles. By clarifying this point, S. 3085 removes the potential barrier to market entry of invoking federal regulation for the sale of natural gas as a vehicle fuel. Such a barrier would represent an additional obstacle not faced by providers of non-regulated fuels. Consequently, section 5 of S. 3085 would allow natural gas to compete on equal footing with the other alternative fuels for vehicles.

CONCLUSION

We endorse S. 3085, with the additional points of clarification for section 4, because it would ensure that federal regulatory jurisdiction would not be invoked for LDCs that sell or transport natural gas that is consumed in vehicles. Nothing in this bill would provide a competitive advantage to NGVs over other alternative fuel vehicles. Rather, this bill removes a potential obstacle that would create a disadvan-

[2] See Kansas-Nebraska Natural Gas Company, Inc. 22 FERC (CCH) Paragraph G1, 176 (Feb. 18, 1983); Northern Illinois Gas Co., 20 FERC (CCH) Paragraph G1, 267 (Aug. 27, 1982); Advisory Opinion Letter of January 28, 1982 from FERC General Counsel Charles A. Moore; Advisory Opinion Letter of August 20, 1981 from FERC General Counsel Charles A. Moore; Advisory Opinion Letter of December 7, 1979 from FERC General Counsel Robert A. Nordhaus.

tage for natural gas when competing to fuel fleet vehicles under the amended Clean Air Act.

Senator WIRTH. Thank you very much, Mr. Tilley.

As you know, I have a new Jeep Cherokee which has been converted to natural gas use, and before we have been subjected to one distributor, and Amoco just opened a distribution outlet in Boulder, Colorado, on the corner of 30th and Baseline, so we have a competitive distribution system for natural gas in Boulder, Colorado, and in Denver.

Mr. TILLEY. We want to see more of those stations out there.

Senator WIRTH. So do I.

Mr. TILLEY. We are working hard with those companies to try to accomplish that.

Senator WIRTH. I am going to get to Mr. Cummins and then I am going to come back and talk about what we can do with this report, this legislation, the Clean Air Act, Saddam Hussein. It seems to me we are at a kind of a nexus of forces here, and here we have got more than a gem, I mean we have got a major jewelry store right here and we have got to get that, if that is the right metaphor, get that out and get people to look at it and enjoy it, and understand the value of it.

Mr. TILLEY. We would certainly agree with those comments.

Senator WIRTH. I will come back to that.

Mr. Cummins.

STATEMENT OF CARL CUMMINS, DIRECTOR, GOVERNMENT AND COMMUNITY RELATIONS, MINNEGASCO, ON BEHALF OF THE NATURAL GAS VEHICLE COALITION, ACCOMPANIED BY JEFFREY SEISLER, EXECUTIVE DIRECTOR, THE NATURAL GAS VEHICLE COALITION

Mr. CUMMINS. Thank you, Mr. Chairman. My name is Carl Cummins. I am director of government and community relations for Minnegasco. Today, I am testifying on behalf of the Natural Gas Vehicle Coalition, which is a broad-based national organization dedicated to promoting and encouraging the use of natural gas as a vehicle fuel.

Today, natural gas vehicles offer an excellent opportunity to provide an economic, safe, and energy-efficient solution to problems related to mobile source air pollution. I know that the Senator, through his work on the Clean Air Act, is extremely familiar with the many benefits of natural gas, and so I will truncate my testimony and move directly to the substance of S. 3085.

That bill does provide several important technical corrections to regulatory barriers which could inhibit the development of natural gas as a vehicle fuel. The bill is a far-sighted piece of legislation which anticipates regulatory problems and solves them before they have caused disruptions in the energy market place.

The bill basically codifies existing Federal Energy Regulatory Commission policy that FERC will not assert jurisdiction over vehicular gas sales by local distribution companies. It assures that the provisions of section 1(c) of the Natural Gas Act, the so-called Hinshaw exemptions, will not be disturbed in situations where natural gas distributor sells gas as a vehicle fuel which, once it is in

the vehicle and beyond the distributor's control, may be burned in another State.

Further, it assures that the exemptions from Federal regulation granted to certain utility systems which operate their integrated natural gas systems in several States under section 7(f) of the Natural Gas Act will not have these exemptions subject to challenge.

The coalition supports S. 3085 and hopes that this subcommittee, the full Senate, and the House will be able to act in the time remaining in the Congress to present it to the President. With the rapid expansion of the natural gas vehicle infrastructure of fueling stations such as the ones you have seen in your home State, this bill is an important technical clarification that is required as soon as possible.

Thank you for the opportunity to testify, Senator.

[The prepared statement of Mr. Cummins follows:]

PREPARED STATEMENT OF THE NATURAL GAS VEHICLE COALITION

The Natural Gas Vehicle Coalition is a broad-based national organization dedicated to promoting and encouraging the use of natural gas as a vehicle fuel. The Coalition supports the development and implementation of federal arid state policies that encourage the use of natural gas for cars, trucks, buses, and other vehicles. The Coalition also supports new technologies that advance or assist the growth and commercialization of the natural gas vehicle market and the natural gas vehicle (NGV) industry.

The Coalition's approximately 125 members include natural gas distribution companies, pipelines, automotive equipment and vehicle manufacturers, NGV equipment suppliers, NGV users, educational institutions and other organizations interested in commercializing natural gas as a vehicle fuel.

NATURAL GAS VEHICLES OFFER AN EXCELLENT OPPORTUNITY TO PROVIDE AN ECONOMIC, SAFE, AND ENERGY EFFICIENT SOLUTION TO PROBLEMS RELATED TO MOBILE SOURCE AIR POLLUTION

Natural gas as a vehicle fuel is economical. An equivalent gallon of natural gas sells for between 42 cents and 80 cents. On the average, compressed natural gas retails for about 62 cents an equivalent gallon, substantially less than gasoline or diesel fuel.

Natural gas vehicles (NGVs) are environmentally benign. In light duty engines, NGVs produce about 85% less reactive hydrocarbons (the precursor to smog and ozone) than gasoline engines; in excess of 90 less carbon monoxide; and approximately 18 to 30% less greenhouse gases—carbon dioxide and methane. Nitrogen oxide (NO_x) reductions have also been achieved and light duty NGVs have been shown in testing in California and at the EPA laboratories in Ann Arbor to be in compliance with, and in many cases well below current standards. NO_x emissions in heavy duty natural gas engines are showing substantial reductions over traditional diesel fuel. Natural gas contains no particulate matter and, thus, eliminates black soot associated with diesel trucks and buses. Developments in heavy duty engines show dramatic reductions in emissions compared to diesel and gasoline. Lean burn engines and retrofit equipment now being tested at Southwest Research Institute (San Antonio, TX) to convert existing diesel engines all indicate that natural gas may be the only fuel available to meet stringent 1991 and 1994 Federal emissions levels without expensive tailpipe particulate control technologies (which today do not exist in market-ready condition) or catalysts to reduce formaldehyde (as is likely to be required with methanol engines).

Natural gas is an abundant domestic fuel. Ninety-three percent of the gas consumed in the U.S. is produced domestically. The balance comes mostly from Canada, hence the expanded use of natural gas will decrease U.S. reliance on oil from unreliable foreign sources. As for supply, according to the U.S. Department of Energy there is about 65 years of natural gas available at today's prices; and a 200 year supply in the U.S., considering all readily accessible and more exotic sources. If ten million vehicles were converted to natural gas, they would consume approximately 1 trillion cubic feet (Tcf) of gas, or about 6% of today's total national gas consumption.

Natural gas as a vehicle fuel is safer than (or as safe as) any existing or alternative fuel on the market. Natural gas has a narrow flammability range (between 5 and 15% natural gas to oxygen) and is lighter than air, so it escapes into the atmosphere in case of a leak, rather than pooling on the ground. The vehicle fuel tanks have been subjected to severe abuse testing, including dynamite, bonfire, gunshot, and car crashes, that indicate they are safer than any other fuel storage systems. A recent testimony to NGV safety is the New York City Triborough Bridge and Tunnel Authority's change of its regulations to allow NGVs to travel in tunnels and the lower levels of dual roadway bridges.

The expanded use of NGVs promotes energy efficiency and conservation. NGVs create an abundant non-seasonal demand that contributes to base-load capacity for pipelines and utilities. Much of the refueling of NGVs can be done in off-peak hours.

THE VEHICULAR NATURAL GAS JURISDICTION ACT OF 1990 PROVIDES AN IMPORTANT TECHNICAL CORRECTION TO A REGULATORY BARRIER THAT COULD INHIBIT THE DEVELOPMENT OF NATURAL GAS AS A VEHICLE FUEL

It is essential that natural gas not be burdened either with unnecessary regulation or with regulation differing greatly from other fuels. Current law regulates the interstate transportation of natural gas. Approximately 10 local distribution companies (LDCs) with service territories overlapping state boundaries can receive an exemption from FERC regulation (Section 7[f] of the Natural Gas Act). The advent of natural gas vehicles, however, poses a situation where natural gas stored on-board a car or truck as the prime mover fuel is technically regulated if that vehicle travels across a state boundary. An LDC's "Hinshaw Exemption" under section 1(c) of the Natural Gas Act, therefore, becomes jeopardized if gas is sold to an NGV customer who then drives his vehicle across a state boundary.

The case of KN Energy, Inc. (22 FERC 61,176) partially resolved this issue. In KN Energy the LDC was found not to be regulated, however, FERC did not definitively resolve the issue of whether a Hinshaw exemption is jeopardized by the sale of natural gas as a vehicle fuel.

S. 3085 is a good bill that removes this institutional barrier to the full market potential of natural gas as a vehicle fuel by assuring that FERC is not able to assert transportation jurisdiction over the movement of natural gas when stored aboard a vehicle as a prime mover fuel. The Coalition supports the bill and hopes that this committee, the full Senate, and the House will be able to act in the time remaining in this Congress to present it to the President. With the rapid expansion of the NGV infrastructure of fueling stations, this bill is an important technical clarification that is required as soon as possible.

Senator WIRTH. Mr. Cummins, thank you.

First of all, a couple of technical questions going back to the Hinshaw exemption issue.

Mr. Tilley, under this, as you pointed out in your testimony, a local distribution company can engage in the interstate transportation of gas within a State and may sell interstate gas for resale within the State if the gas is ultimately consumed in that State.

To your knowledge have any LDC's hesitated to supply gas for vehicular use, or balked at participating at CNG pilot or demonstration programs, because that company feared losing its Hinshaw exemption?

Mr. TILLEY. Not to my knowledge, Senator.

Senator WIRTH. Do you know, Mr. Cummins? Do you have any experience with that? Has there been any hesitation of the LDC's to get involved in that?

Mr. CUMMINS. I am not aware of any specific examples where that has occurred, Senator, I think. But utilities tend to be very cautious enterprises and this legislation will certainly move toward eliminating any perceived impediments that some utilities may see in the future.

Senator WIRTH. Okay. Now, when gas is sold to retail customers like at the Amoco here, or the Amoco station in Colorado, will State utility commissions set the price?

Mr. CUMMINS. That will vary.

Senator WIRTH. You had not thought about that before?

Mr. CUMMINS. Well, I certainly had thought about it. It will vary on a State-by-State basis. In Minnesota, for example, 5 years ago our legislature effectively deregulated the sale of natural gas as a vehicle fuel. It defined the sale of natural gas, or redefined public utility to exclude the sale of natural gas as a vehicle fuel from regulation in our State, so if Amoco is doing business in Minnesota it has no fear of being regulated as utility.

Senator WIRTH. But that is a State-by-State issue?

Mr. CUMMINS. That is a State-by-State issue.

Senator WIRTH. Has NARUC taken a position on this, or is this just too new for them to do so to make a recommendation to the State utilities? Should they do so? Should we ask them to do so?

Mr. CUMMINS. NARUC has taken a formal position to promote and encourage the use of natural gas as a motor vehicle fuel. I do not believe they have quite gotten all of the regulatory issues.

Senator WIRTH. Should we be encouraging them to do so, do you think?

Mr. TILLEY. Absolutely, Senator. We have had some discussions with NARUC, and I think as Mr. Cummins said, they are obviously moving cautiously in this area, and I think that might be very helpful.

In fact, I would like to second Mr. Cummins' comments, that I believe if this legislation passes, it will certainly send a signal to the various State commissions and the NARUC body that there is a very definite interest being shown in making natural gas a fuel that can be used on a competitive basis, and hopefully this will serve as a signal to some of the State regulators that this is, in fact, not only in the national interest but in their own interest in the States they operate in.

Senator WIRTH. Mr. Cummins points out that in Minnesota there is an exemption, and Amoco would not be regulated—or they are exempted from any regulation if natural gas is used as a vehicle fuel, but if the local distribution company sells natural gas, like, say, the public service company in Colorado sells natural gas, are they exempted as well?

Mr. CUMMINS. The way that our commission has interpreted the statutory change that was made 5 years ago is that Minnegasco, as a utility, is not regulated either.

Senator WIRTH. If you sell natural gas as a vehicle fuel?

Mr. CUMMINS. As a vehicle fuel, for that limited purpose. Otherwise, we are under the total umbrella of comprehensive regulation.

Senator WIRTH. Would it be a good idea to craft a letter to go to NARUC on this subject, asking them to take this under advisement and to recommend to State public utility commissions that they follow the kind of exemption that has been done in Minnesota?

Mr. CUMMINS. Far be it for me to suggest to the Senate and the Congress what they ought to do, but I suspect the States are rather jealous of their individual regulatory prerogatives. In addition, I suspect that different utilities may have differing views as to what

kind of regulation or deregulation ought to occur in their respective States.

Senator WIRTH. Having made that politic answer, I can tell you that the chairman of the subcommittee would appreciate any thoughts that either of you or your organizations might have on what such a letter would contain.

Mr. TILLEY. We would be pleased to provide that.

Senator WIRTH. Let me ask you finally, here we are in this situation—well, let me, Mr. Seisler, ask you something about some of the alternative fuel provisions in the clean air legislation. Do you know how many vehicles will be covered by the fleet provisions in the pending Clean Air Act Amendment?

Mr. SEISLER. I think the estimate is about 2 million vehicles, if we are talking about the private sector. Or are we talking about public sector vehicles as well?

Senator WIRTH. A combination of both.

Mr. SEISLER. Well, the Federal Government has about—as I understand it, the last number is about 293,000 vehicles operating in the country, and to the end of this century they are talking about covering about 70 percent of the new purchases, so that will not cover the whole 293,000.

Maybe half of those to the end of the century, and that is just a guesstimate. I would have to sit down and work out the percentages of new vehicles purchased, calculating about 20 percent of the new vehicles every year are new purchases.

For the public sector vehicle there are about 16 million total fleet vehicles, and our best guesstimate from a number of different sources included in the National Association of Fleet Administrators, DOT numbers and some other sources, is of the 16 million, about 2 million of those are of the central refueling type.

Now, it depends upon what weight classes are going to be under the jurisdiction of the Clean Air Act right now. The initial House proposal for heavy duty vehicles, as an example, included all trucks. I think one of the issues being debated now is they are looking at a cut-off of about 14,000 pounds, and so that 2 million number is subject to being diluted somewhat and whittled down, depending upon how the language is going to be crafted in the final negotiations.

Senator WIRTH. Do you have any idea who is working to whittle that down? Is there pressure to move that back?

Mr. SEISLER. Yes. The people who stand in line for the status quo for liquid fuels, specifically diesel and gasoline, people who want to see a dilution of those numbers of fleet vehicles that would be under the jurisdiction of the bill include some of the heavy duty engine manufacturers, some of the oil company individuals, some of the car companies in terms of the lighter-weight vehicles. All those people who are in the liquid fuel business are resistant to go to alternative fuels for a variety of reasons.

Senator WIRTH. Has that been articulated outside the conference? Has that been pretty well formulated and organized?

Mr. SEISLER. Yes, it has been.

Senator WIRTH. Have you been watching this pretty carefully over the last couple of months?

Mr. SEISLER. We have been in the middle of this for over a year now.

Senator WIRTH. Have you seen any difference in the articulation of the resistance since the Iraqis went into Kuwait and the crisis in the Middle East?

Mr. SEISLER. No, I have not.

Senator WIRTH. So we are sort of acting in the Clean Air Conference as if it were business as usual, even though we have the potential of this enormous cut-off, and all of the threats, for example, that were made yesterday or the day before yesterday by Saddam Hussein?

Mr. SEISLER. When we brought up the issue to some of the folks involved in the negotiations and the various staff members, as well as some of the special interests involved in this, we brought up the issue of supply and disruption price increases, and we were firmly told, this is a clean air bill and has nothing to do with energy security.

Senator WIRTH. Say that again? I mean, I find that absolutely astonishing.

Mr. SEISLER. We were told by some of the individuals, when we mentioned the notion of energy security as being yet another reason to become active and aggressive with an alternative fuels program under the Clean Air Act, we were told that they heard of this argument about energy security; that the Clean Air Act was strictly focusing on clean air; that energy security should not be necessarily a consideration in the progress of the bill.

Senator WIRTH. That is like somebody bringing up an appropriation bill and saying well, what we are covering in the appropriation bill is important, but it does not have any relationship at all to the deficit or the overall economic condition of the Federal Government. Is that not about the same thing?

Mr. SEISLER. That is about the same thing.

Senator WIRTH. We have this ostrich-like attitude toward a lot of the budget issues, and now we are doing it toward clean air and energy.

Mr. SEISLER. We thought, as someone who is promoting alternative fuels, not only natural gas, we have been looking at a variety of provisions that would be good for all the alternatives, that this would be greater impetus for the conference committees to work rapidly, and in fact, try to go for an expanded program. But as I said, those comments fell on deaf ears.

Senator WIRTH. Let me ask you another specific item before coming back to the broader policy issue. Are there any regulatory impediments other than those addressed in S. 3085 that natural gas vehicles might have when competing with methanol, ethanol, or other alternative fuel vehicles for Federal fleet use?

Mr. SEISLER. There are a number of regulatory issues, and if you want to lump tax issues into that same category, you did mention the sale for resale issue, and as clarification, about 25 States do prohibit the sale of natural gas for resale, harking back to the 1930's when utility companies were concerned about landlords selling, reselling fuel to their tenants.

So those provisions are still on the books at the State level, and on a State-by-State basis, some of the companies like Minnegasco

have had to go into the public service commissions and change those regulations and clarify with the parenthetical, "except for the sale of resale for transportation."

So that is one issue that is still is a barrier in a number of States. If you look at the broad brush of regulations, in terms of taxes there is an uneven balance on fuel taxes both at the Federal level and the State level, and if we were to encourage alternative fuel use, one of the things that does encourage it is a spread of the price between the alternative fuel and the traditional fuel.

As I say, there are different—the 9-cent gasoline tax varies for the alternative fuels. As an example, methanol is taxed 4.5 cents per volumetric gallon, propane is taxed at 9 cents a gallon, natural gas is not taxed, electricity is not taxed, ethanol receives a 60-cent-a-gallon subsidy. So there is an imbalance there and from a regulatory standpoint, that would be an interesting issue to tackle.

Standards development on the regulatory side—we, in the Clean Air Act, we have advocated development of standards for things like fueling tanks for all the alternative fuels. They are not regulated right now and that has been a serious problem for natural gas vehicles in terms of the cylinders.

There are no clear regulations for these onboard storage cylinders, the kinds that you have in your Jeep. Those are completely unregulated by the Federal Government. They regulate those tanks only for the transport of gas as a commodity fuel, much like the issue on the Hinshaw provision that we were talking about.

Senator WIRTH. That is like we have regulations for gasoline tanks——

Mr. SEISLER. That is correct.

Senator WIRTH. In automobiles, right?

Mr. SEISLER. That is correct.

Senator WIRTH. That was the Pinto issue and so on.

Mr. SEISLER. That is exactly right.

Senator WIRTH. And you are suggesting there should be some for natural gas, natural gas tanks?

Mr. SEISLER. As well as the oxygenated fuels, and in the case of electricity, the storage of lead acid batteries or other batteries onboard. There are health and safety issues associated with each one of those fuels and they do need to be regulated.

Senator WIRTH. What about GSA solicitations? As GSA goes out with umpty-ump tens of thousands of vehicles they are going to purchase, they must solicit into the various markets and say this is what we are looking for.

Now is that a helpful process from them or are there barriers in that as well?

Mr. SEISLER. It is a helpful process any time the Government gets behind a program and is going to start purchasing vehicles, because we are told by the original equipment manufacturers, show us a market, we will show you a vehicle.

So the extent to which they (a) provide a market and (b) provide leadership to other public and private entities, that is very important.

Now one of the ways that the last request for bid, the request for proposals came out, was that they were looking for a—GSA was

looking for a light-duty vehicle made by an original equipment manufacturer running on an alternative fuel.

Today the only manufacturers, Ford and GM, have prototype vehicles, fuel-flexible vehicles running on methanol, so to that degree, they were the only ones that would qualify under the auspices of that bid.

It would be nice if we could see converted vehicles much like yours, as long as they were fully warranted by the conversion company and they would pass the Federal test procedures for emission standards, that would be a nice addition in the GSA request for bids.

Right now they have been very reluctant and resistant to look at converted equipment, the retrofit or after-market conversion equipment. They are standing behind very solidly, having applied for an OEM.

Mr. CUMMINS. If I might add, Senator, the bidding process tends to focus on the capital cost of the vehicle and natural gas vehicles, because they are not currently manufactured by original equipment manufacturers, tend to be more expensive than those running on gasoline or diesel or other clean-burning alternative fuels, and yet, over the life of the vehicle, the savings to the Government in fuel costs will more than offset those capital costs up front.

Senator WIRTH. That is not in the GSA solicitation, is that right?

Mr. CUMMINS. It was not in the one to which Mr. Seisler was speaking.

Mr. SEISLER. They usually typically have in the procurement practices regulations that they will purchase the lowest bid.

Senator WIRTH. We would also be interested in whatever thoughts you might have on that, if we were to talk to GSA about that, and try to get them to look at the full lifetime cost of the vehicle and the cost to the taxpayer.

It seems to me, if natural gas is coming at what, about 55 cents a gallon——

Mr. SEISLER. Something in that range, yes, 42 cents to 80 cents, depending on where you buy it.

Senator WIRTH. At Amoco in Boulder, it was 55 cents and at the island right around the corner, regular was $1.50. So here is a third of the cost, not an unappealing item at a time when people are concerned about rising gasoline prices.

One other technical question. The only drawback to the vehicle that I have, which I have had for about a year, it runs, I think, 10 times more cleanly than a regular Jeep runs. It has got almost the same power. It has a little less pickup. I can go from 0 to 60 in maybe a second less than I could under regular gasoline.

But other than that, the only drawback is the fact that the tank is a 5-gallon tank and that limits the range of the car. I get about 22 to 25 miles to the gallon on the highway, I guess 22 to 25 overall. So I am limited to about a 100-mile range. I mean, that is what I think about.

So it is really a Denver-Boulder access for the car. If I am going to southern Colorado or going on the Western Slope, I really get limited in that way. So what kind of work is going on in terms of the next step of developing a compression system or a tank system or whatever so I do not have an enormous tank in the back of the

car, but have one that carries more natural gas at the same volume?

Mr. SEISLER. Well, you have identified the real downside of this particular alternative fuel technology is the shape of the cylinder, in that it is cylindrical because it is a high-pressure vessel.

When we were looking at original equipment manufactured vehicles and you take off the entire traditional gasoline system or diesel, we are replacing it with tankage that will allow you to get, on a light duty vehicle, 250 miles. On Mr. Tilley's, the Columbia, the bus that they have, they drove from Columbus, Ohio, to Washington, D.C., on their transit bus and still had half a load of natural gas. They can get some 450-mile range, I believe, on that vehicle. It has the same amount of fuel in natural gas as does a diesel transit bus.

So in OEM, you can take off the fuel system and replace it with as much tankage as you need. So we are looking forward to the day when the range issue is less of a concern because we are not dealing with a bifuel vehicle. I believe yours goes to gasoline and natural gas?

Senator WIRTH. That is right, it does both things. I cannot get to Grand Junction and be out of natural gas; I am stuck at that point.

Mr. SEISLER. Right. In terms of tankage, there are moves in the industry, we are supporting efforts and some of our members are engaged in research looking at lighter-weight tanks which would also have a larger inner diameter to put more fuel in it.

We are looking at the notion of low-pressure storage by taking some charcoal absorbents and putting it into a tank and the charcoal would absorb the gas at about 200 pounds to 500 pounds, as opposed to the 3,000 pounds that you are dealing with.

That would enable us, possibly, to change the shape of the tank, make it more compatible with the chassis of a vehicle, and also lower the compression costs because you would not have to go to four stages of compression.

The jury is still out on the low-pressure storage technology, so a lot of the other research is being focused on lightweight tanks, but I think we may, because of the high-pressure situation, be somewhat locked into a cylindrical shape vessel.

Again, if the vehicles are designed for it, we can fit them up in the chassis with no problem.

Senator WIRTH. Can you get a bigger tank in there, say, for this Jeep?

Mr. SEISLER. Well, I think the approach is they are looking at the space available under various chassis. In the larger duty vehicles you could take a slightly larger cylinder. One of the bus companies, one of our members, is taking 12- and 15-foot cylinders, 16-inch diameter, very long tubes, and putting them onto the roof. If you get into a passenger vehicle it is likely they will take different sized cylinders ranging from small to large and try to incorporate those into the undercarriage of the vehicle.

Mr. TILLEY. Senator, like you I also have an automobile. It is a full-sized automobile, probably bigger than your Jeep, but it has two tanks in it and carries the equivalent of about 13 or 14 gallons of fuel. So right now with that vehicle we drive it 230 to 250 miles.

Senator WIRTH. It is single fuel, though?

Mr. TILLEY. No, it is dual fuel.

Senator WIRTH. It has two tanks?

Mr. TILLEY. Yes. You have the regular gasoline tank, and you have two natural gas tanks.

Senator WIRTH. Where do you put those, in the trunk?

Mr. TILLEY. They are in the trunk, which, as Mr. Seisler says, is one of the downsides now. So what we need is to replace ultimately the gasoline tank and work this more into the configuration of the automobile, if you would.

Senator WIRTH. Let me ask you the same kind of question that I asked Mr. Seisler about GSA and GSA procurement and solicitations. The GSA does not look at the whole item, and we are saying let us get GSA to maybe look at the lifetime cost.

How about the mass transit programs around the country? What is their response to natural gas vehicles in their procurement? Are they viewing it in the same way as GSA is just on the initial cost, or do they look at lifetime costs?

Mr. TILLEY. No, I think they are looking at it more on a lifetime cost basis. As you are aware, we literally had designed for us the first transit bus pretty much from the ground up to run on natural gas, compressed natural gas alone. We worked with the bus company, the Flexible Bus Co. out of Delaware, Ohio; Cummins Engine; and Comdyne Tanks. We have done quite a bit in trying to market that bus with the various transit authorities throughout the country.

In fact, I think next week it is down in Houston or Dallas at a big exhibit, and so far there has been something over 20 of those buses that have been ordered by various transit companies, and as I understand it there may be as many as 100 orders pending, if you would.

So we are seeing some very, very real interests particularly in those nonattainment areas where this is a real problem. So we are seeing the transit authorities show a real interest in the natural gas bus.

Senator WIRTH. A final question, if I might, Mr. Seisler. If we assumed that those 2 million vehicles that you were talking about, alternative fuel vehicles, were on the market right now, were in use right now, how much oil would we be saving in a year? Have you calculated that?

Mr. SEISLER. I think the 2 million vehicles on the road number that we are looking at, if I am not mistaken, would translate into something like 200,000 barrels per day, I believe. I can go back and check that, but I believe those are some of the numbers that the Gas Association has worked out.

Senator WIRTH. Around 200,000 per day, and we use about 16 million barrels per day. Of that, about 8 million is imported?

Mr. SEISLER. Right.

Senator WIRTH. So we are using about 1/40th or 2.5 percent of those 2 million vehicles which would translate to about 2.5 percent. That means there are about 100 million vehicles on the road; is that right?

Mr. SEISLER. There are about 150 or 160 million passenger vehicles, and then there are about 16 million fleet vehicles on the road, 16 million to 20 million.

Senator WIRTH. But the fleet vehicles drive a great number of miles.

Mr. SEISLER. They drive about 25,000 miles per year.

Senator WIRTH. If you had the ideal program that you foresaw in terms of natural gas vehicles, how many would you have? You have 2 million now, which is less than ideal, facing all of this resistance. If that resistance melted away and you were to define what an ideal alternative fuel vehicle program would amount to, how many vehicles would that be?

Mr. SEISLER. In a perfect world, understanding that the resistance to changing out of gasoline and diesel is still going to be substantial, I would like to see something in the neighborhood of 15 percent of the total vehicle population passenger cars as well as fleet vehicles.

Senator WIRTH. How many would that be?

Mr. SEISLER. You are talking about 160 million.

Senator WIRTH. So 20 million vehicles?

Mr. SEISLER. Yes, about 20 million vehicles.

Senator WIRTH. For 20 million vehicles, how many barrels of oil would you back out?

Mr. SEISLER. Basically, you would knock one zero off of there, and that is the generic way of coming up with the barrels per day. So 20 million.

Senator WIRTH. So you would be about 2 million barrels per day. So if we were to do the right kind of thing with the Clean Air Act, if we were to use the Clean Air Act as leverage we could reduce our dependence on foreign oil over a relatively short period of time, say 5 to 7 years by 25 percent?

Mr. SEISLER. That is correct. If we were to be aggressive with alternative fuels, be it natural gas or other domestic—well, there are not that many other domestics but I think the leading candidate is going to be natural gas, and that would be the strategy we would pursue.

Senator WIRTH. You are convinced, Mr. Tilley, that there is a greater availability of natural gas? This is not something that we are going to run out of?

Mr. TILLEY. No question, Senator.

Senator WIRTH. This is a North American fuel, and if we do not have it the Canadians have a ton of it, too. Is that right?

Mr. TILLEY. That is right. We have it in the Lower 48's. It is domestic. It has to have something to do with what is going on in the Mideast.

Senator WIRTH. Just a final number. I spoke at the natural gas vehicle exhibit down here and said that one of the problems that I think we have is that maybe we are all being a little too timid on this front. You know, we have not been aggressive enough and as advocates on the Hill and as an industry, and I was just getting out there and saying in the bluntest possible terms let us get serious about clean air, let us get serious about alternative fuel programs, let us get serious about energy independence.

Maybe what we ought to be doing is to sit down and see if we can figure out a broader strategy of the natural gas industry, the local distribution companies, the alternative fuel vehicle companies, that whole network out there, and join together and really up the ante

on this. I mean, here we are faced with—I say "we," those of us who are interested both in doing the right thing environmentally and in terms of energy policy—are faced with this coalition that you described earlier, Mr. Seisler.

Maybe we have to do a better job between now and the first of the year of launching the alternative and really let the American public understand just what you are talking about. With one step alone you back out 25 percent of our imported oil over a period of time. If we do a variety of other things we can probably do better than that, and we ought to be a lot more aggressive on this front, I would think, than we have been.

I would bet you most people do not understand it, but from my own experience just with this one vehicle, people are hungry for it. Guys stop me on the street and say is it really true that you are getting gasoline at 55 cents per gallon, how do I get a conversion, where do I do it, how much does it cost? You would have that kind of public pressure building up, particularly if things get as bad as they appear they might in the Persian Gulf crisis.

I am preaching to the choir, I know, but I think we have to be a little bit more creative and a little more aggressive about this.

Mr. SEISLER. The forces of status quo are very powerful and come with a large budget behind them. Sometimes we feel like a David and Goliath in the face of some of these interests that are fighting the status quo.

Senator WIRTH. David won, did he not?

Mr. SEISLER. Yes, he did. I try to keep reminding our industry of that fact.

Senator WIRTH. Gentlemen, we thank you very much for being here, and thank you for your help. We look forward to working with you and look forward to receiving any thoughts that you might have on both communications with NARUC and communications with the General Services Administration.

The record will be left open for a few days I think until the end of this week for any further comments you might like to make or for further questions from the committee.

Thank you all for being here.

[Whereupon, at 10:25 a.m. the hearing was adjourned.]

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